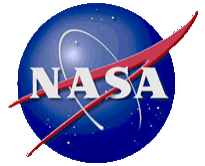


Mars Scout 2002 Concept Study Report Kickoff Meeting

**December 17, 2002
(Amended 12/20/02)**

(Your personal encounter with Mars....)



Introduction

- **Purpose of this meeting:**

To provide final instructions including clarifications for the conduct of the Phase A Concept Study.
- **Concept Study produces:**
 1. Concept Study Report providing sufficient implementation and cost detail to allow NASA to confirm/validate mission concept.
 2. Site Visit briefing and materials
 3. Price Proposal that allows contract negotiations for phase B.

More details to follow as per the agenda!

Mars Scout 2002

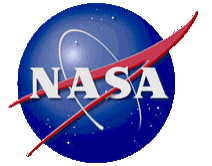
Concept Study Kickoff Meeting Agenda



12/17/02

9:30	Introduction	Karen McBride
	Welcome	Orlando Figueroa
	Science	Jim Garvin
	Planetary Protection	John Rummel
	JPL Scout Management	Steve Matousek
	Education/Public Outreach	Rosalyn Pertzborn
	TMCO Requirements Overview	Wayne Richie
	Break	
	Q/A's	PI's/Proposal Teams
12:30	Adjourn	

Competition Conditions



“Blackout” after the Kickoff Meeting

- Communications after this meeting will be **controlled**.
- All questions are to be directed to HQ/Jim Garvin.

Relevant Documents etc.



Hardcopies of the G/L's are available (a few copies for each team)

Downselect 2003 Information–Scout Acquisition Home Page

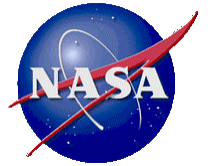
<http://centauri.larc.nasa.gov/mars/>

- Downselect Guidelines & updates, if any
- General Announcements regarding downselection
- Any specific changes will be brought to your attention via email
- Minutes and Q&A's from this Kickoff meeting will be maintained and posted on this website

Mars Scout Library

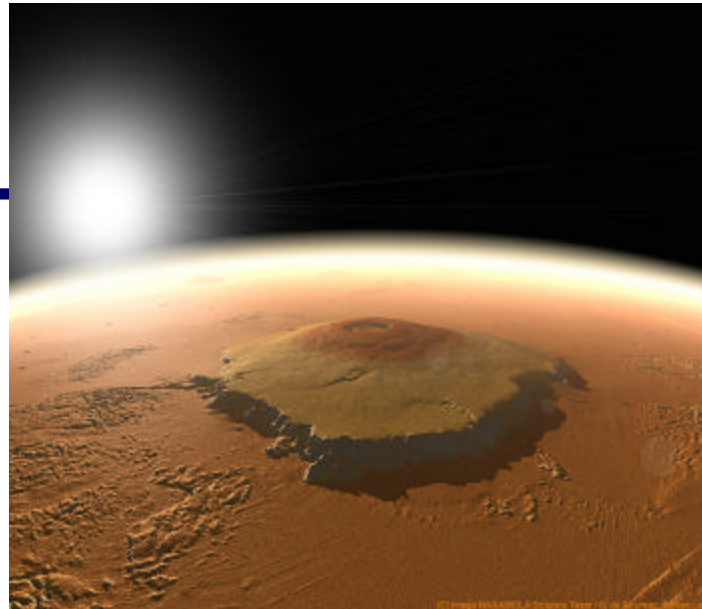
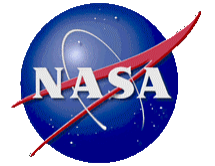
<http://centauri.larc.nasa.gov/mars/marslib.html>

- Guidelines and Criteria for the Phase A Concept Study.
- Example Mission Definition and Requirements Agreement
- Example of an International Agreement



Orlando Figueroa

Mars Exploration Program Director



Mars Scout 2007

Science Perspectives

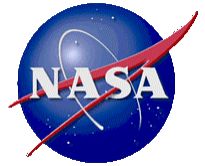
Dr. Jim Garvin

Lead Scientist for Mars Exploration



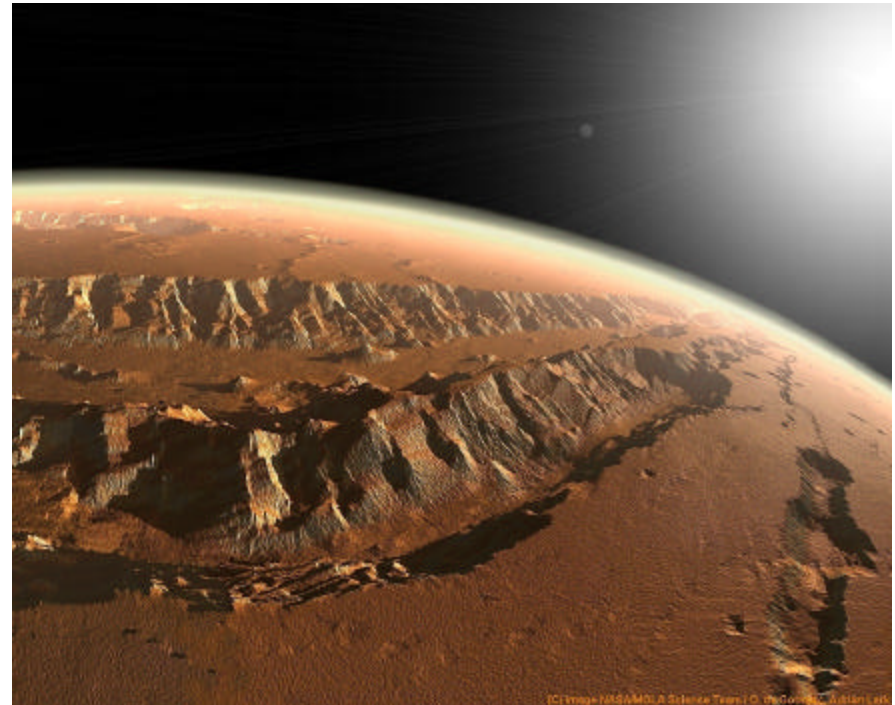
The View from SCIENCE

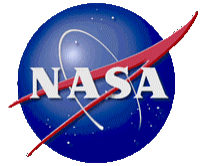
- Dr. Weiler selected 4 extremely high science value missions – Congratulations!
 - We are all dazzled by what you have offered...
- As of now, the scientific scope of the selected missions is FROZEN
 - Science scope/deliverables, etc. should only go up!
 - If science is affected, the concept study report should thoroughly document the scope and cause of the change
- Any decrease in scope could result in the reconvening of the Scout Science Panel
- Your job is to maintain science scope during your Phase A studies



Final Thoughts...

- *Science* was the major evaluation factor thus far
- Now, the ball shifts to technical implementation, management, cost, etc.
- All four missions selected naturally fit into the MEP science strategy!
- If desired, we have an option for PI's to brief their SCIENCE (only) to the Selection officials just before the final decision





Mars

Planetary Protection

Mars Scout 2002 AO Phase-2 Kick Off

John D. Rummel
NASA Headquarters

12/17/02

Planetary Protection Policy



It is NASA's policy to:

- Preserve planetary conditions for future biological and organic constituent exploration
- To protect Earth and its biosphere from potential extraterrestrial sources of contamination

Space Studies Board

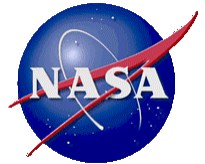


1992

- *Biological Contamination of Mars: Issues and Recommendations*, which reported advice to NASA on measures to protect Mars from contamination by Earth organisms, as well as overall policy guidance
(Ken Nealson, Chair)

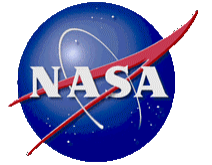
New forward contamination report has been requested from SSB

Protection Requirements

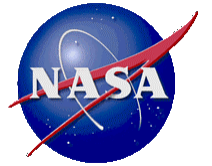


- NASA's Planetary Protection Policy (see NPD 8020.7E and NPG 8020.12B) imposes certain restrictions on mission operations and spacecraft cleanliness
 - Depend on the particular type of mission
- Proposers:
 - Should indicate (i) the anticipated planetary protection Category of the mission under NASA directives; (ii) the proposed mission operational accommodations to comply with the anticipated requirement including organizational responsibilities and (iii) the proposed steps to be taken for

Compliance with Planetary Protection Requirements



- Finalize Categorization and attendant requirements with NASA PPO
- Ensure Mission Operational Accommodations Appropriate to the Category
- Provide for Spacecraft/Instrument Preparation, As Needed



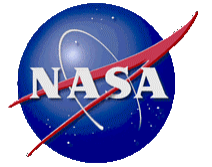
MEP

Scout Management and Constraints

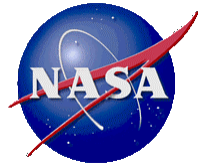
Steve Matousek

Mars Scout Manager

Congratulations!



- I know you have worked very hard to get to this point.
- I look forward to working with you.
- I, and the Scout Office, are here to help you.



Outline

- Scout Management Office Overview

Step 2 (Phase A)

- STEP 2 Funding Process
- MEP Requirements and Constraints
- MEP Letter of Endorsement process

Phase B

- What Happens After Selection for Flight?

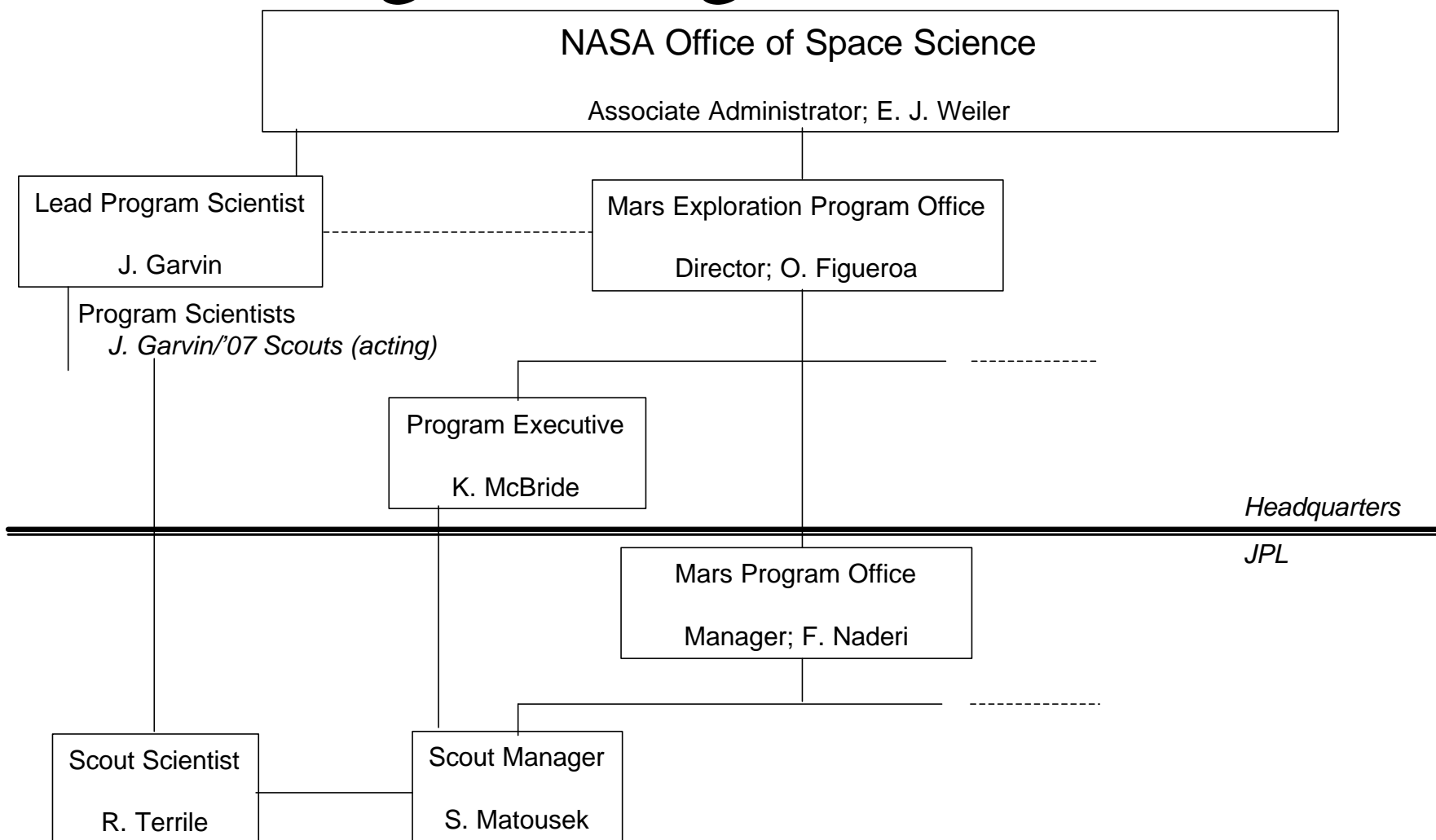
Mars Scout Management



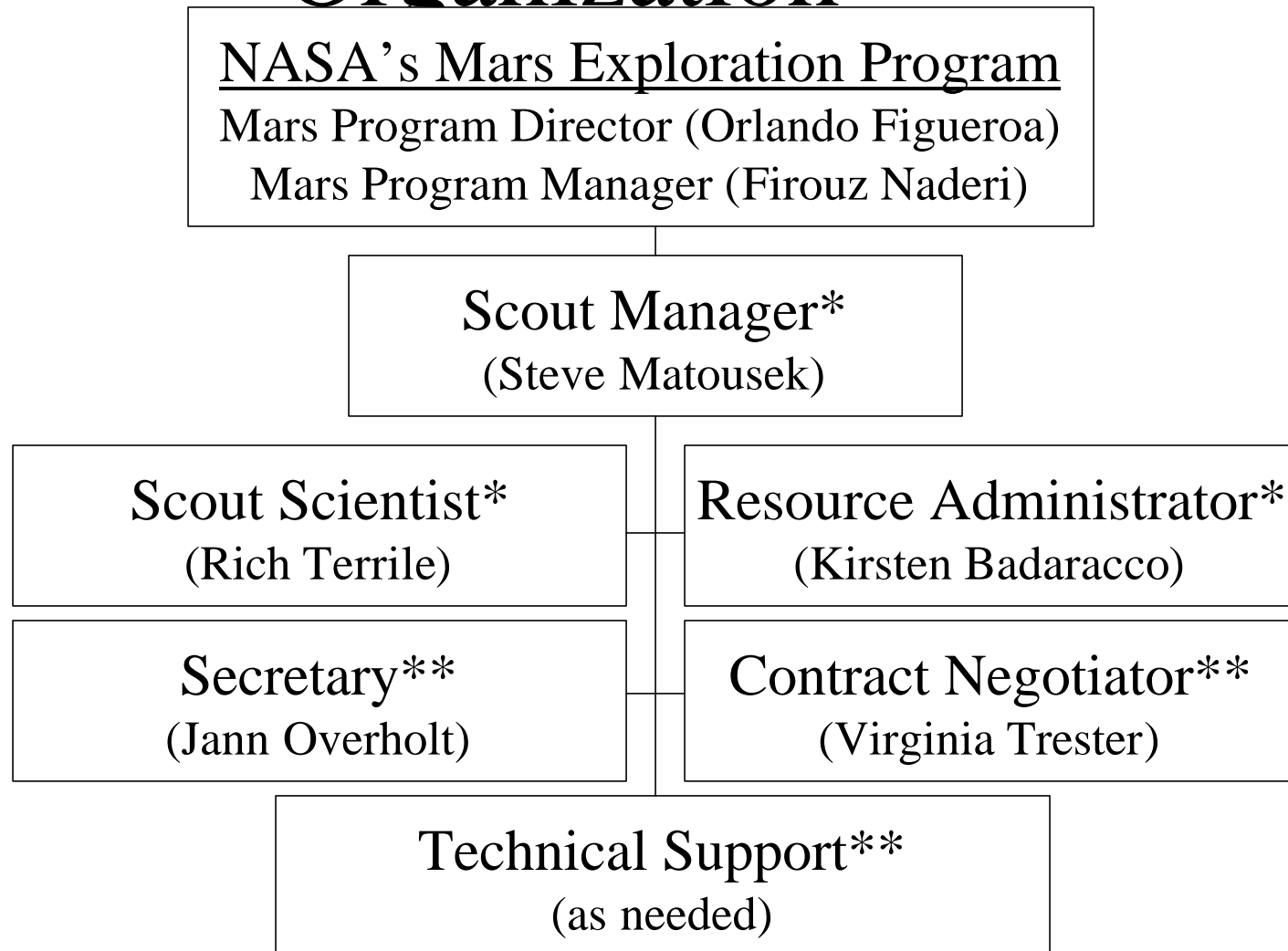
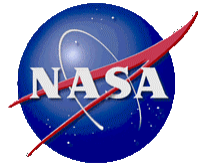
MPO Mars Scout Office will:

- **Coordinate Government
Furnished Services, Equipment,
and Facilities**
- **Initiate and Monitor Contracts
of Step 2 Selected Investigations
as Contract Technical Manager**

Mars Exploration Program Organization

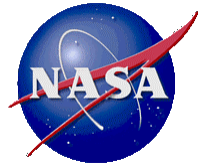


Scout Mngmt Office Organization



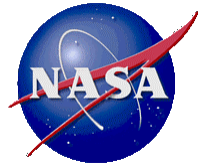
* full time

** half time



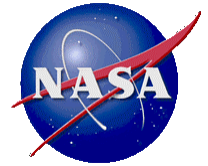
Scout Office Firewall

- Scout Office delegated Step 2 contracts oversight by NASA HQ
- All Scout Office personnel sign Non-Disclosure Agreements
- Scout Office does NOT exchange PI proprietary data with JPL competed missions office
- All Step 2 study teams are treated equally and fairly



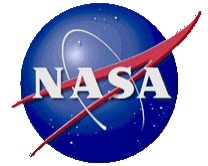
Step 2 Funding Process

- PI identifies Step 2 team members and \$'s that each team member receives
- Scout Office executes contracts as directed by PI
- JPL accounts created for JPL work
- Monthly tracking of charges
- Monthly status of funds meetings with Proposal Manager/Project Manager



Step 2 Schedule

- Contracts issued by 2 weeks from receipt of PI funding allocations for study team (excluding year end holidays)
- CSR due May 15, 2003 (more detail in Richie's presentation)
- Oral briefings/site visits: June 30-July 11 '03
- Selection for Flight: early August, 2003
- Phase B letter contract: two-three weeks after selection for flight



Step 2 Life Cycle Cost

- The AO funding profile still holds for Step 2:

	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008
Total (\$M RY)	5	23	90	115	94	15

- Projects are advised that after down select for flight, no cost increases can be requested, exceeding the cost established in the Concept Study Report can lead to cancellation.
- Assuming a successful Phase A Concept Study by this team and subsequent downselection, NASA will require a Confirmation Review for development at the conclusion of Phase B/PDR (see Concept Study Criteria and Guidelines) and continued progress toward launch on schedule and within cost during Phase C/D

Highlights of MEP Requirements

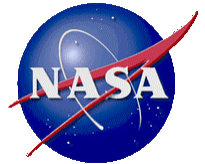


- Scout projects utilizing Mars telecomm/navigation infrastructure must consult the Mars Relay Network WWW site (via the Scout Library) [password to the site is available from Gary Noreen, 818-354-6048]
- Critical event information is required.
- Scout projects must be synergistic with MEP E/PO plans.
- Letter of Endorsement from MEP must be included in the CSR.
- AO MEP requirements are still valid for Step 2.
- SF 1411 (or equivalent) Contract Pricing Proposal Cover Sheet will be required in the CSR for use in

MEP Letter of Endorsement (LOE)

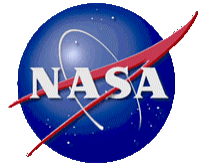


- Required for inclusion in Concept Study Report.
- Intended to improve the quality of MEP interface for ALL CSR's.
- MEP team will sign Non-Disclosure Agreements.
- First interaction with MEP team Jan/Feb (earlier is better)
- MEP provides written feedback within 5 business days of first interaction.
- Second (and final) interaction addresses MEP issues from first interaction, occurs in mid to late April.
- By April 30, MEP provides LOE for inclusion in CSR (will detail areas adequately addressed and issues).



MEP LOE Areas

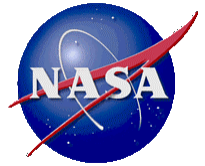
- Overall system engineering - program/project interactions
- Usage of MEP telecomm/navigation assets
- Critical Event coverage
- Compatibility with MEP E/PO plan
- Availability and usage of MEP science databases
- Usage of MEP operations infrastructure
- Usage of MEP technology program



After Selection for Flight

- Hit the ground running!
- Scout Office will conduct a Phase B kickoff meeting soon after selection for flight.
- Letter contract will continue funding during this time.
- Starting point of contracts will be the material you have in your CSR and any information collected in the site visits.
- Begin contract negotiations for Phase B
- Finish negotiations and start contracts well before end of FY '03.

In Summary



- Scout Management Office will be visible and accessible
- Enable fast start of required Step 2 contracts
- Matousek will be point of contact for MEP interface issues

**The Role of Education & Public Outreach (E/PO)
in the
Mars Scout 2002 Program**

**Presented at the Mars Scout 2002 Kickoff Meeting
NASA Headquarters, Washington, DC**

**Rosalyn A. Pertzborn
December 17th, 2002**

OSS Education and Outreach

What Are We Trying To Do?

- Share the excitement of space science discoveries with the public
- Enhance the quality of science, mathematics and technology education, particularly at the pre-college level
- Help create our 21st century scientific and technical workforce

OSS Education and Outreach

Excerpts from the Hart-Rudman Report

Education as a National Security Imperative

The capacity of America's education system to create a 21st century workforce second to none in the world is a national security issue of the first order. As things stand, this country is forfeiting that capacity.....

Education is the foundation of America's future.... Education in science, mathematics, and engineering has special relevance for the future of U.S. national security, for America's ability to lead depends particularly on the depth and breadth of its scientific and technical communities.

The health of the U.S. economy, therefore, will depend not only on professionals who can produce and direct innovation in a few key areas, but also on a populace that can effectively assimilate a wide range of new tools and new technologies.

The American educational system does not appear ready for such challenges...

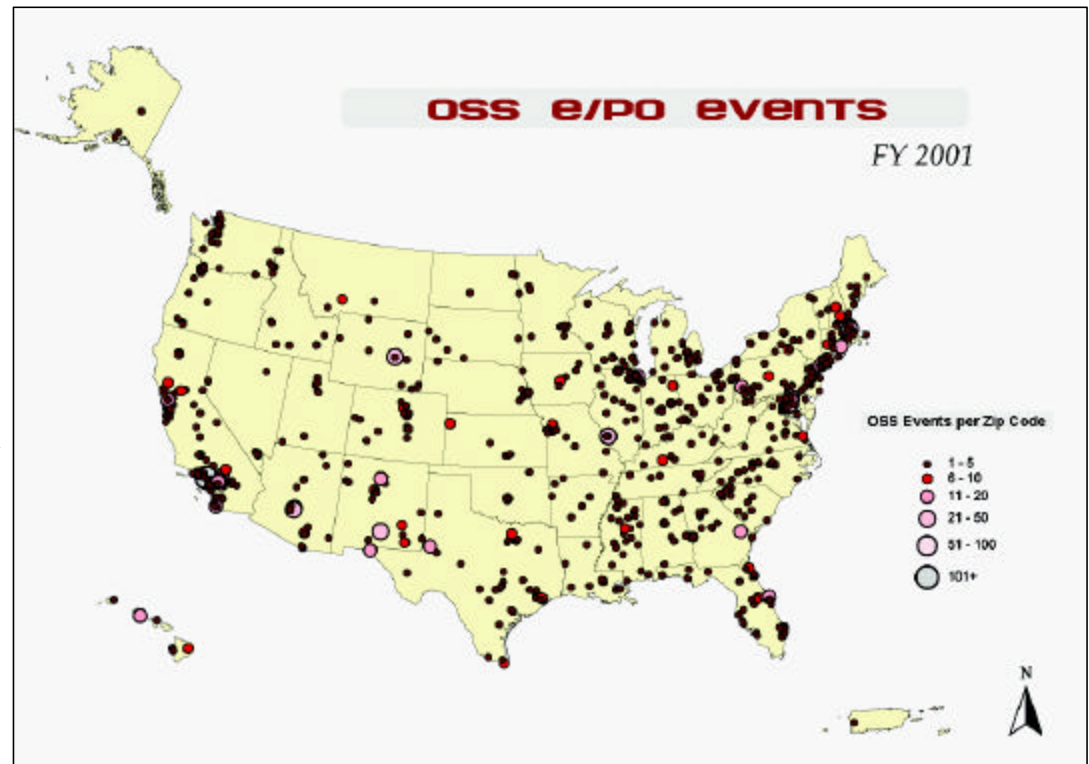
OSS Education and Public Outreach

Where Are We Now?

- OSS is firmly committed to making a substantive contribution to pre-college education and the broad public understanding of science, mathematics, and technology.
- E/PO is an integral part of every mission and research program.
- A major national program of space science education is now underway. For further information see:
 - The OSS FY 2000 & FY 2001 E/PO Annual Reports
(see OSS E/PO Homepage)
 - The OSS E/PO Newsletters (6 published to date)
 - The OSS E/PO Homepage <http://spacescience.nasa.gov/education>

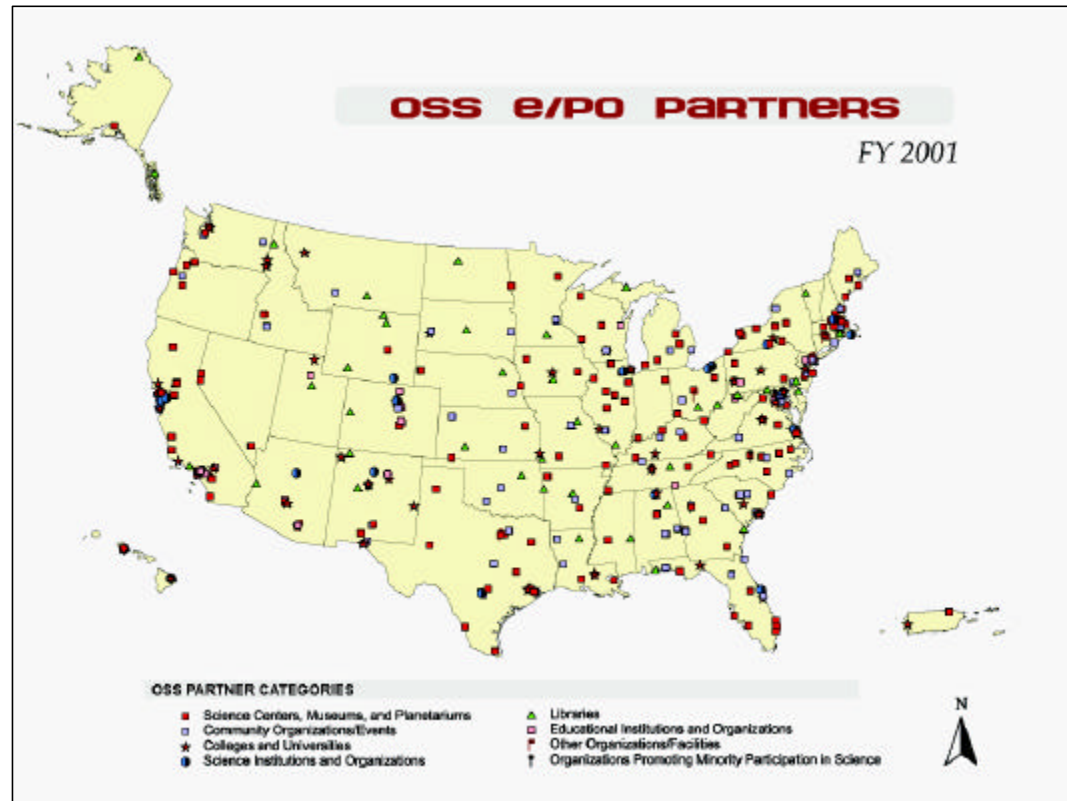
Extent of FY 2001 OSS E/PO Program

- Over 400 E/PO activities and new products.
- Nearly 3000 discrete E/PO events.
- Presence in all 50 states, DC, PR, and VI.
- Presence at 20 national and 36 regional E/PO conferences.
- More than 50 awards and other forms of public recognition received.
- Estimated participants:
 - Over 200,000 direct participants in workshops, community and school visits, and other interactive special events.
 - Over 50 million Internet participants for web casts, web chats, and other web events.
 - Potential audience of over 200 million for lectures, planetarium shows, museum exhibitions, conference exhibits, radio, television, and other forms of public media.



Contributors to FY 2001 OSS E/PO Program

- Over 100 OSS Missions and Programs.
- Nearly 900 OSS-affiliated scientists, technologists, and support staff.
- Nearly 500 institutional partners, including:
 - ~ 180 science centers, museums, and planetariums.
 - ~ 40 precollege educational organizations, school districts and boards.



- ~ 130 science institutions and organizations, colleges and universities (including 24 minority institutions).
- 12 professional societies of minority scientists and organizations promoting minority participation in science.
- Over 130 libraries, community and other organizations.

OSS Education and Public Outreach

What Are We Looking For In The Mars Scout CSRs?

- A full E/PO proposal giving a credible story containing specifics and commitments/reality (not rhetoric).
 - See Appendix B of Guidelines and Criteria for the Phase A Concept Study
 - A good case can be laid out in 4 pages.
 - Letters of support/commitment from E/PO partners are important.
- A program that is aligned to the OSS E/PO Strategy and E/PO Implementation Plan
 - The content of both these documents is directly reflected in the E/PO Evaluation Criteria contained in Appendix B of the Concept Study Guidelines
- A commitment to adequately fund the proposed E/PO program
 - OSS Guideline: 1-2% of the total mission cost through all phases excluding launch vehicles
- A commitment to coordinate E/PO activities with the Program-level MEP Public Engagement Plan is required (see Mars Scout Library).

E/PO may play a role in the selection process

Evaluation will be done as part of the TMC0 process

OSS Education and Public Outreach

What Should The Mars Scout CSRs Discuss?

- E/PO Objectives, planned activities, implementation plans, evaluation plans, PI and science team members involvement, educational personnel involvement, partnerships and collaborations with education and outreach organizations.
- Organization, management, budget and implementation schedule.
- Plans for developing and disseminating education/outreach products and materials, for contributing to the training of underserved and/or underutilized groups in science and technology, and for coordination of the planned E/PO program with the existing OSS E/PO program.
- Letters of support/commitment from partners and resumes of key E/PO personnel should be included in the appendices to the proposal.

How Will We Judge Quality?

General Evaluation Criteria

The general criteria to be applied to the evaluation of the E/PO component of all Mars Scout CSRs are:

- the quality, scope, realism, and appropriateness of the proposed E/PO program, including the general intellectual linkage to the science objectives of the parent research proposal or mission;
- the adequacy, appropriateness, and realism of the proposed budget, including demonstration of effective use of funds;
- the capabilities and commitment of the proposer and the proposer's team to carry out the proposed E/PO program, including the direct involvement of one or more science team members in overseeing and carrying out the proposed E/PO program, as well as the establishment or continuation of effective partnerships with institutions and/or personnel in the fields of education and/or public outreach as the basis for and as an integral element of the proposed E/PO program; and
- the appropriateness of plans for evaluating the effectiveness and impact of the proposed education/outreach activity.

How Will We Judge Quality?

Specific Evaluation Criteria

To ensure that the goals and objectives of the OSS E/PO strategy are realized in practice, proposals will also be evaluated using the following specific criteria as appropriate. The specific E/PO criteria are:

- when dealing directly or strongly affecting the formal education system (e.g. teacher workshops or student programs carried out at public institutions, such as science museums and planetariums), the degree to which the proposed E/PO effort is aligned with and linked to nationally recognized and endorsed education reform efforts and/or efforts at the state or local levels;
- the degree to which the proposed E/PO effort contributes to the training, involvement, and broad understanding of science and technology by underserved and/or underutilized groups; and
- the potential for the proposed E/PO activity to expand its scope by having an impact beyond the direct beneficiaries (e.g., reaching relatively large audiences, being suitable for replication or broad dissemination, and/or drawing on resources beyond those directly requested in the proposal).

How Will We Judge Quality?

Mission Criterion

The mission criterion to be explicitly considered as part of the evaluation is:

- **The general intellectual linkage of the planned E/PO program to any unique scientific or technical aspects of the Mars Scout mission.**

Plans for coordination of the proposed activities with other ongoing OSS E/PO efforts will also be explicitly considered in the evaluation process.

OSS Education and Public Outreach

Sources of Information

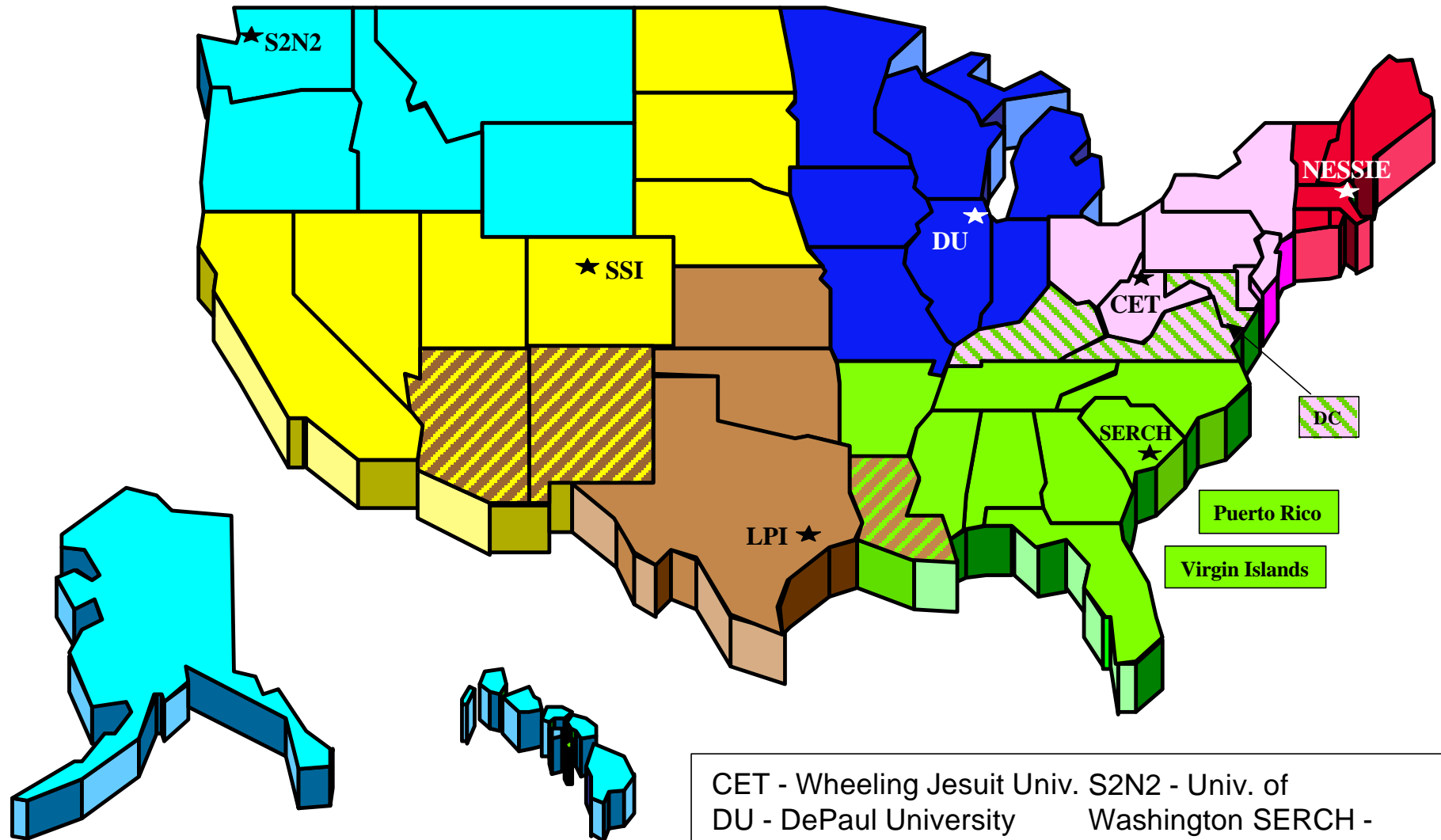
- A Short Reading List:
 - OSS Education and Public Outreach Strategy
 - OSS Education and Public Outreach Implementation Plan
 - OSS Explanatory Guide for the Education/Public Outreach Evaluation Criteria
 - OSS FY 2000/2001 Education and Public Outreach Annual Reports
- The OSS “Explanatory Guide”
 - Describes in more detail what the Evaluation Criteria mean
 - Contains answers to “Frequently Asked Questions”
 - Was developed to ensure that E/PO efforts are prepared and evaluated on a consistent basis
 - “Guide” has been updated (Version 2.0 on-line February 2002)

OSS Education and Public Outreach

Sources of Assistance

- Call your local Broker/Facilitator or the appropriate OSS Education Forum
 - The Support Network is there to help, but is not responsible for preparing the E/PO portion of your Investigation
- In accord with the operating principles developed by the Support Network, discussions with individual Teams developing proposals will be treated as proprietary
- Contact information is available through the OSS E/PO Homepage
- Questions about the OSS E/PO Program may be directed to the Office of Space Science E/PO Program Office.

FY 2002 OSS E/PO Broker/Facilitator Regions

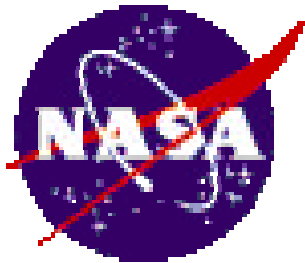


CET - Wheeling Jesuit Univ. S2N2 - Univ. of
 DU - DePaul University Washington SERCH -
 LPI - Lunar & Planetary Inst. College of Charleston
 NESSIE - Museum of Science & Space Science Inst.
 (cross-hatches indicate shared regions)

OSS Education and Public Outreach

Some Summary Observations

- OSS is serious about education and public outreach
 - A major national program is now underway
- E/PO will be an integral element of the SCOUT evaluation and selection process
 - E/PO has made a difference in some selections
- OSS has seen a significant evolution in the level of maturity, ambition and sophistication in mission E/PO programs over the past several years
 - We have high expectations for SCOUT E/PO.
- Resources are available to help the PI's in developing their proposals
 - Contact the Forums and Broker/Facilitators for help
 - Read the “Explanatory Guide” and other available documentation
- Treat E/PO with the same rigor and professionalism that you treat the science and engineering aspects of your Concept Study Report.



Mars Scout Concept Study & Downselect

Wayne Richie
Scout Acquisition Manager
NASA Langley Research Center

December 17, 2002
Amended 12/20/02

Introduction

- First of all let me congratulate all of you as I can tell you that the competition during this solicitation was extremely tough, so you should be very proud of yourselves just being here.
- Second, I need to say that the Science you proposed was Great and the **Preliminary Concept** that you presented to implement this Science was sufficient that we accepted it or at least gave you the benefit of the doubt as being likely doable.
- I must emphasize to you in my briefing today, however, that the Science is now Selected and from this point, we will expect from you a mature, **Final Concept** for the implementation of your science mission, with sufficient details and commitments to allow the evaluation team to confirm that you are READY for Phase B.

Downselection

Downselection (Phase A) is part of the Acquisition Phase and is still governed by AO, Sections 1.1/1.2 which provides for:

- Up to 6 months Phase A Concept Study (note *actual* schedule in this briefing)
- Funding up to \$500K (real year dollars)
- NASA assessment of implementing details, including
 - modifications to science objectives (if any)
 - proposed cost (final) to NASA OSS
 - plans for science implementation
 - plans for mission implementation including technical and management
 - plans for E/PO, SDB, and Technology infusion/transfer
- Depending on funding availability and scientific merit, NASA will confirm one or more investigations for Phase B (beginning of the Implementation Phase).

All is done under Hq Direction

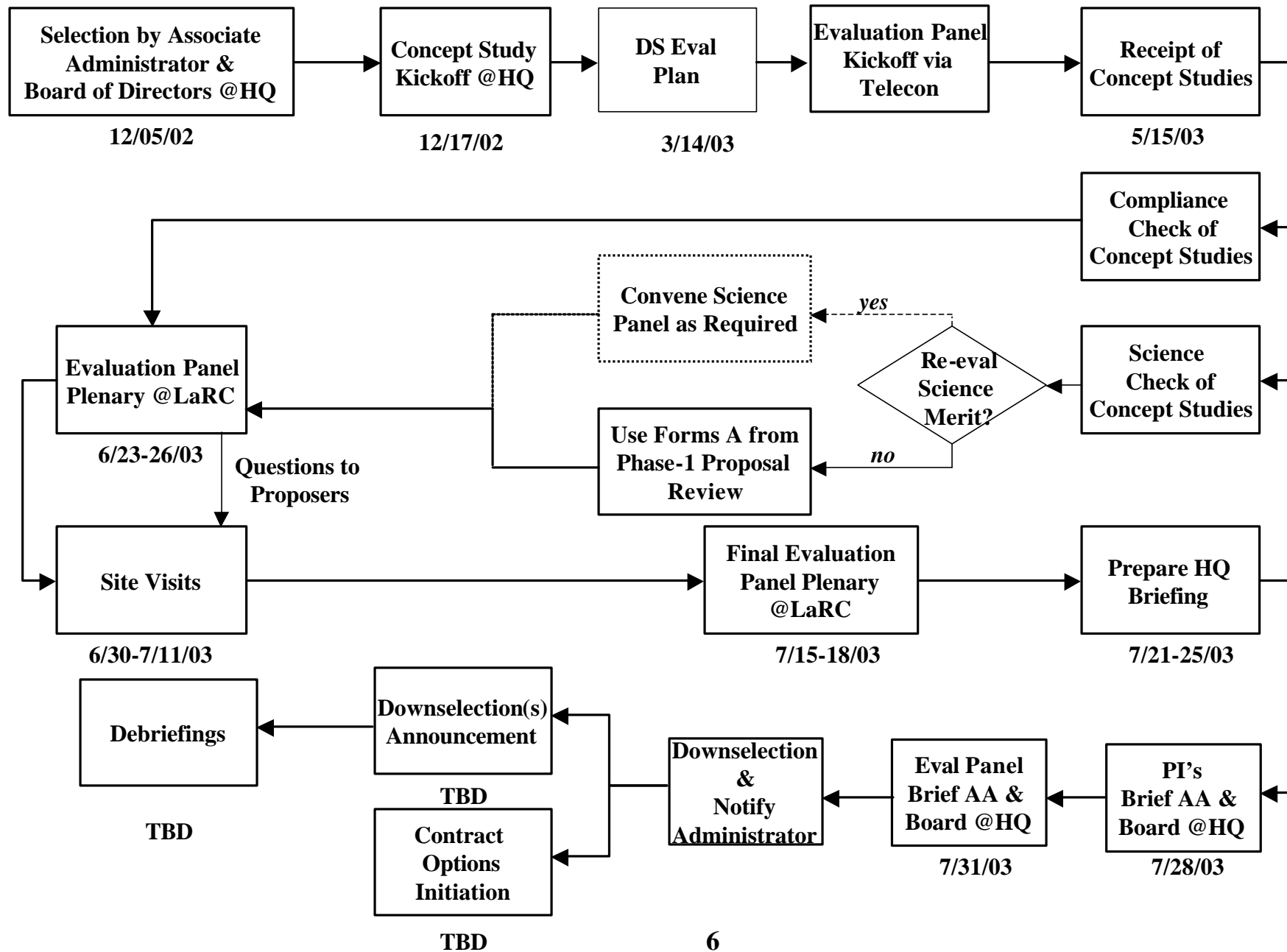
Concept Study Report Content

- **Phase 1 Selections based heavily on Science Merit**
 - Unless Concept Study results demand it, Science objectives must not change
 - Science section from Proposal **MUST** be repeated in this Report
 - Any and all Changes to be highlighted
 - Unless Science changes, Phase 2 Downselection will now emphasize implementation: Science Implementation Feasibility and TMC O Feasibility
- **Technical Merit and Feasibility = Science Implementation Feasibility in Phase A**
 - Details of instrument strategy, sensitivities, and implementation are now required in Phase 2/Downselection
 - Science requirement flow down should be finalized.
 - Block diagrams, instrument, and observation tables should be updated with design approach and details
 - Details of data management planning are also required including data acquisition, analysis, archiving, publication, and release to public.
- **Feasibility of Mission Implementation including Cost Risk**
 - Same in Phase A as proposals but now Preliminary Concept must become FINAL and sufficient details provided that the Evaluation Panel can **VERIFY** the Concept is mature enough to proceed to Phase B.

Evaluation Criteria

- **4 Evaluation Criteria per Phase A Concept Study Criteria and Guidelines Revision 12/12/02**
 1. Scientific Merit of Investigation: Not reevaluated unless there is a change made
 2. Feasibility of Science Implementation: Per Concept Study Guidelines
 3. Feasibility of the proposed approach for Mission Implementation, including cost: Per Concept Study Guidelines
 4. Other Program Factors Feasibility: Education and Public Outreach, Technology Infusion and /or Transfer, and Small, Disadvantaged Business Activities: Per Concept Study Guidelines
- **Total Mission Cost to OSS**: This is equal to proposed cost and is not evaluated. Note: This will be a selection factor and cannot increase from proposed cost by more than 20% or exceed the total cost cap.

Scout Downselect Schedule/Evaluation Flow



Mars Scout Acquisition Approach

- The Acquisition of a Mars Scout Mission is a phased management decision process with commitment of program funds made incrementally as Project maturity is demonstrated.
- This approach allows NASA the maximum possible flexibility with lowest and latest fund commitments. Specifically:
 - Phase I: Proposals from Community Program cost for evaluation only.
 - Phase II: Phase A Concept Program cost is \$500K for missions selected from Phase I. (\$250K for MOO).

LaRC/ESSSO Led

Mars Exploration Program Office Led

- Phase B/PDR Confirmation Phase B Program cost = 10-15% Phase C/D excluding GFE (ELV, etc.).
- Phase C/D or CDR Program cost approximately \$200M excluding ELV and long lead Items.

Acquisition approach is conservative and provides program risk amelioration via phased procurement and incremental commitment.

TMC RISK ANALYSIS

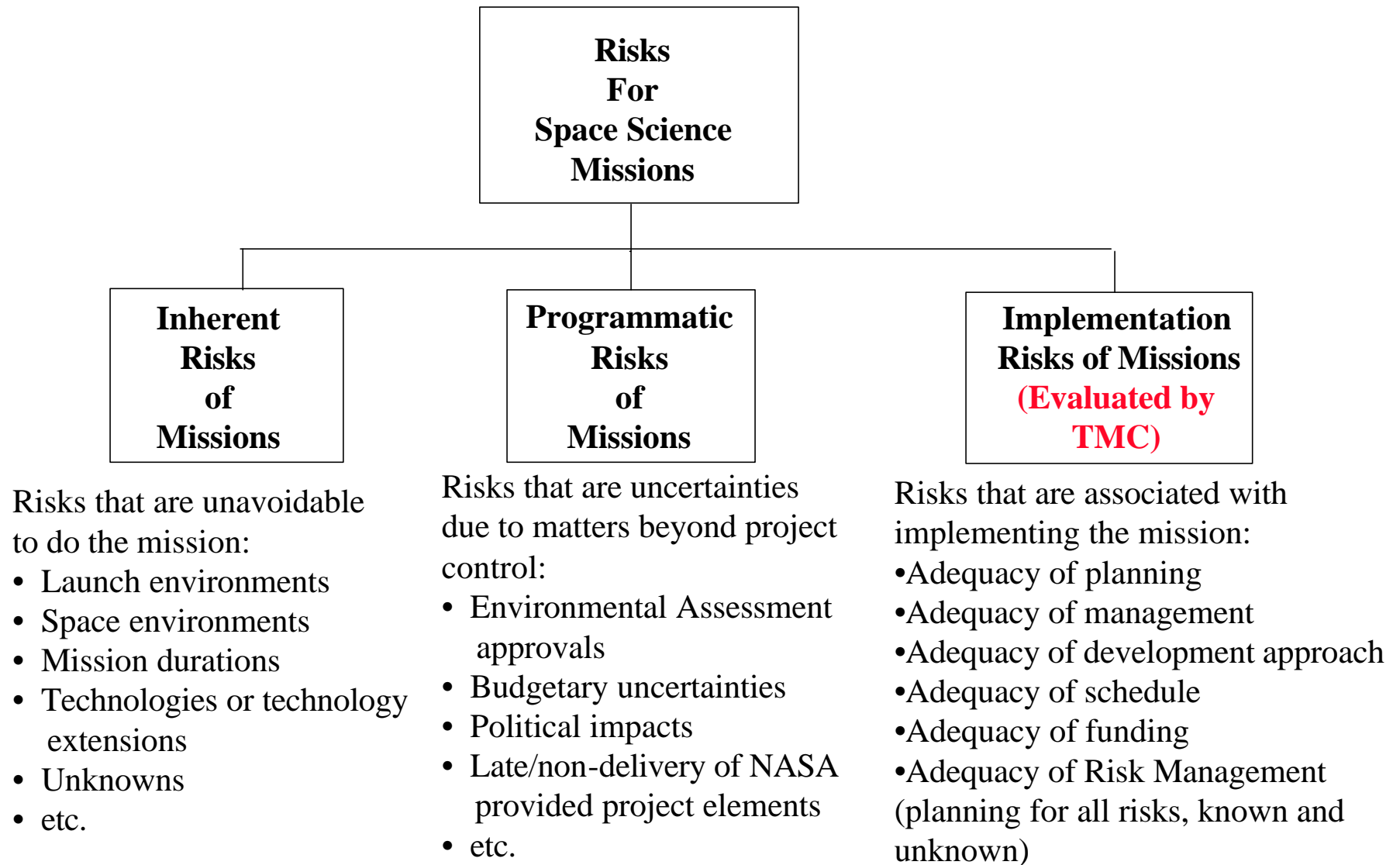
Phase One Proposal Risk Assessment:

- The Phase One Selection is based primarily on Science.
- The TMC Risk Assessment is based on a *preliminary concept* with some benefit of the doubt given to Proposers.
- The Cost Assessment is done without Proposer feedback and is integrated into the overall TMC Risk Assessment.
- High Risk Proposals will not be selected; however, Med-Low Risk Proposals may be selected if the Science is compelling.
- The Goal: Eliminate high risk proposals. Note: In Phase Two, we might find some selected proposals too risky.

Phase Two Phase A Risk Assessment:

- The Phase Two Downselection will be based on Implementation Planning.
- The TMC Risk Assessment is based on a *final concept*....little or no benefit of the doubt given to Proposers.
- The Cost Assessment is done with Proposer feedback...it will be a critical factor.
- Risk of Implementation will be judged!!

Space Science Mission Risk



TMCO Requirements Overview

- **Emphasis Points to Remember**

- General and programmatic portions of the AO are still valid: Pertinent parts of Sections 1, 2, 3, 4, 6, and 7, and Appendix A, B, C, D, E, and F.
- Note: NO ELECTRONIC COVERPAGE SUBMITS req'd.
- Cost Growth: limited by AO cost caps and/or +20%
- If International participation is involved, at least draft agreements must be submitted. See HQ/Code I.
- In Phase 1, Science was prioritized; in Phase 2 implementation details and commitments will be emphasized. Definitized, mature planning and commitment will be expected in the CSR.
- If your Project is chosen at Downselection, the proposed costs submitted with the Concept Study Report are final unless NASA elects to renegotiate as a condition of the Downselection.

TMCO Requirements Overview (Continued)

- **Emphasis Points to Remember (continued)**

- Since no cost growth after selection is allowed, therefore, the best possible cost estimates with sufficient reserves and margins should be proposed.
- For government provided services (launch services, DSN, etc) get latest revised estimates and letters of commitment.
Contact POC's in reference documents.
- Full Cost accounting has been directed by the Administrator.
- Data submitted is assumed to be both Costs and Obligations
- Authority is required to IMPLEMENT the project. Note: long lead procurement needs and CR constraints. Long lead procurements that require substantial Phase C money before the CR will not be allowed.
- Other Program factors implementation (E/PO, SDB, and Tech Infusion/Transfer) must be adequately addressed to define content, commitment, and feasibility.

TMCO Requirements Overview (Continued)

- **Emphasis Points to Remember (continued)**
 - 7120.5B has been released and you must now adhere to it:
 - 1. Clarifies requirements by making them “shall” statements.
 - 2. Adds NASA themes on safety and security throughout the document.
 - 3. Adds requirement for success criteria to be defined during Formulation.
 - 4. Simplifies content of the Program Commit Agreement (PCA).
 - 5. Expands discussion of configuration management.
 - 6. Eliminates references to “Lead Center” and clarifies “Roles and Responsibilities”.
 - 7. Clarifies types of technology programs and how they apply to Agency processes.
 - 8. Adds recognition of Systems Management Offices (Created since NPG 7120.5A).
 - 9. Better defines the nature and content of independent reviews.
 - 10. Adds requirement for independent life cycle cost estimates at specific stages.
 - 11. Establishes a mandatory Requirements Review for projects greater than \$150M.
 - 12. Integrates the National Environmental Policy Act (NEPA) process with the program and project management activities.

TMCO Requirements Overview (Continued)

- **Specific Requirements for Concept Study Report:**
 - *Guidelines for Concept Study Report Preparation*, Revised 12/12/02 defines the preparation and submission requirements.
 - Reports are single volumes to be organized as outlined in the Guidelines document (Sections A-L).
 - Page formats and limitations are defined: note foldout = 1 page
 - No references to proposals; **evaluation only of material from (1) Concept Study Report; and (2) Briefing materials from Site Visits.**
 - All contributions must be documented with signed commitments by authorizing, institutional officials.
 - A Mission Definition and Requirements Agreement (MDRA) signed by all the proposal partners is a **required** Appendix.
 - Although not required *with* the CSR, some project critical items must be clearly shown to be *planned* (Project Plan, Orbital Debris Plan, etc) to be accomplished.
 - Appendices other than specified are NOT allowed.

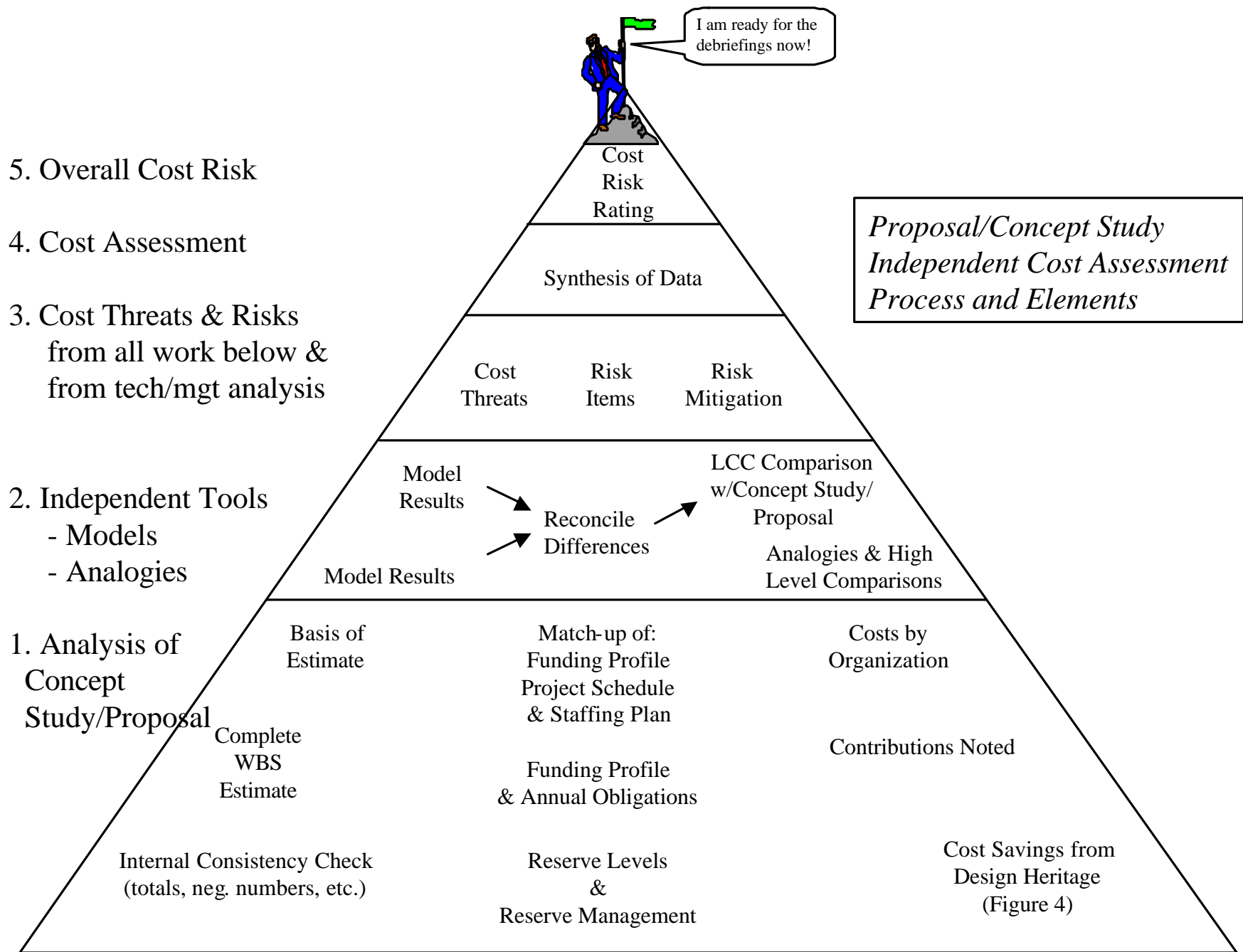
TMCO Requirements Overview (Continued)

- **Specific Requirements for Concept Study Report (continued):**
 - Scout revisions to the G/L document have been made to:
 - Clarify all requirements for evaluation information and allow in many cases additional appendices to assure that this data is provided.
 - Provide additional page count flexibility.
 - Emphasize MEP interfaces and requirements.
 - Add 7120.5B and emphasize that it is not a significant change.
 - Clarify that ALL missions are risky but implementation risk is what will be evaluated.
 - Clarify that both the CSR and Site Visit material is to be evaluated.
 - To assure that AO definitions and requirements apply
 - Emphasize need for specific margins planned and how managed
 - Emphasize need for details of planned environmental testing
 - Emphasize need for definitized and substantiated project costs
 - Emphasize need for clarification of claims of heritage in hardware and software
 - Emphasize need for priced, implementable proposal to speed Phase B contract.
 - To emphasize required NASA Independent Review requirements
 - Clarify submit requirements: 40 copies plus 6 CD-ROM's

TMCO Requirements Overview (Continued)

- **TMCO Evaluation**

- TMCO evaluation defined in *Concept Study Guidelines & Criteria* document Revised 12/12/02
- In Phase 1, TMC Risk was evaluated in only 3 degrees each: High, Medium, Low Risk; with some *benefit of doubt* given proposers.
- In Phase 2/Downselect, at least 9 degrees for TMC will be used for evaluation. Evaluations will be considerably more refined and discriminating. Much less benefit of doubt will be granted to proposers.
- **Cost adequacy/realism will be an important and emphasized risk consideration**
- Proposals at or near the cost caps and/or with insufficient cost reserves and margins will be considered High Risk.
- New developments/technology will add risk unless “demonstrated” (TRL 6 or better) by PDR, or have flight qualified/demonstrated (TRL 8 or better) backups. TRL 6 is defined as system/subsystem model or prototype demonstrated in a relevant (ground or space) environment.



TMCO Requirements Overview (Continued)

- **Oral Briefings/Site Visits**

- **When:** Oral briefings/site visits to be scheduled in the period of approximately 6/30-7/11/03
- **Purpose:** Clarify all implementation plans, details, and commitments.
- **Location** of the Briefings/Sites to be determined by the PI/proposal team and coordinated with LaRC/Wayne Richie
- Briefings at each site will be limited to 8 hours plus up to 1 hour for site tour if one is desired.
(Suggest days of 8-5:30 including 1 hour lunch, not including tour)
- The visiting evaluation team WILL require a private 1/2 hour meeting during lunch (working lunch is OK).
- The visiting evaluation team will be constrained in number, therefore all briefings should be in plenary. (No splinter meetings please)
- Written mission/project specific questions will be submitted to PI/proposal team about 3 work days before visit regardless of order or schedule date. All teams will get the same lead time.
- Unless specifically requested by NASA, only data and material presented during the briefings will be evaluated.
- Preferred Site selections and dates are due to LaRC nlt 1/13/03.
- Confirmation of Site Visit Schedule will be given nlt 1/27/03.

Competition Conditions

- **“Blackout” after the Kickoff Meeting**
 - Communications after this meeting will be **controlled**.
 - Technical and expert coordination should be exercised directly with POC’s identified in today’s briefing and the Scout Library documents.
 - All programmatic questions, including questions of policy, questions of interpretation, and questions of clarification, should come to HQ/Jim Garvin.
 - In any case where POC guidance conflicts with CSR Criteria and Guidelines or the instructions given today, contact Jim Garvin for resolution.
 - Answers if warranted will be provided via Scout Acquisition Program Homepage and emailed to all PI’s.
 - Site visit details will be coordinated with LaRC/Wayne Richie.

**Congratulations
and
Good Luck!!**



Planetary Protection Back Up Charts

Mission

Categories (NPG 8020.12B)



PLANET

MISSION

MISSION

PRIORITIES

TYPE

CATEGORY

A Not of direct interest for understanding the process

Any

I

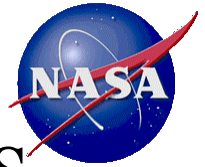
of chemical evolution. No protection of such
planets is warranted (no requirements)

B Of significant interest relative to the process of
chemical evolution, but only a remote chance that
contamination by spacecraft could jeopardize
future exploration.

Any

II

NPG 8020.12B

Requirements for Mars Missions

- Forward Contamination/Outbound Phase –
- PP Category III Orbiter (impact avoidance and contamination control)
 - The probability of impact of Mars by the launch vehicle, including upper stages, shall not exceed 10^{-4}
 - Assembly and maintenance in Class 100,000 (or better) clean room facilities
 - The probability of impact on the surface of Mars shall not exceed 1×10^{-2} for the first twenty years

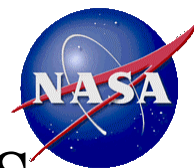
NPG 8020.12B



Requirements for Mars Missions

- Forward Contamination/Outbound Phase (cont.)—
- PPCategory IV Landers (including landed rover[s])
 - Probability of accidental impact on the target planet by hardware other than the probe or lander modules (systems not meeting bioburden requirements) must not exceed 10^{-4}
 - Organic materials inventory for quantities =1 kg. Samples of not less than 50 g of each organic

NPG 8020.12B



Requirements for Mars Missions

● Backward Contamination/Inbound Phase (cont.)—

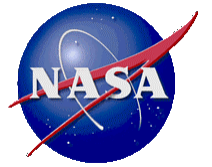
● PP Category V Missions

- The implementation requirements that relate to the protection of the target planet of a Category V mission (i.e., the outbound phase) are those of the Category appropriate to the mission if there were no Earth return phase.

● Certification for "Unrestricted Earth Return"

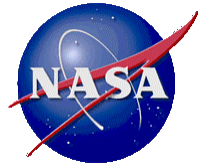
- Earth return missions certified for "unrestricted Earth return" have no other formal implementation requirements. Requests for certification as "unrestricted

COSPAR Requirements for Mars Missions (new 10/02)



- Missions to Mars—
 - PP Category IVb. For lander systems designed to investigate extant martian life, all of the requirements of Category IVa apply, along with the following requirement:
 - The entire landed system must be sterilized at least to Viking post-sterilization biological burden levels, or to levels of biological burden reduction driven by the nature and sensitivity of the particular life-detection experiments, whichever are

COSPAR Requirements for Mars Missions (new 10/02)



- Sample Return Missions from Mars—
- PP Category V. The Earth return mission is classified, "Restricted Earth return."
 - Unless specifically exempted, the outbound leg of the mission shall meet Category IVb requirements. This provision is intended to avoid "false positive" indications in a life-detection and hazard-determination protocol, or in the search for life in the sample after it is returned. A "false positive" could prevent distribution of the sample from containment and could lead to unnecessary

COSPAR Requirements for Mars Missions (new 10/02)



- Sample Return Missions from Mars (cont.)—
 - The mission and the spacecraft design must provide a method to "break the chain of contact" with Mars. No uncontained hardware that contacted Mars, directly or indirectly, shall be returned to Earth. Isolation of such hardware from the Mars environment shall be provided during sample container loading into the containment system, launch from Mars, and any in-flight transfer operations required by the mission.